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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 13

Application Number: 09/639,599
Filing Date: August 16, 2000
Appellant(s): TOBACK, ALEX S.

MAILED
JAN 21 2004
GROUP 3700

Guy D. Yale
For Appellant

Supplemental
EXAMINER'S ANSWER

This is in response to the remand of November 24, 2003.

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(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-24 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

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4,426,425

GOOD ET AL.

1-1984

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Appellant's Admitted Prior Art (AAPA) in view of Orowan (US Patent 3,655,424).

With regards to claims 1-3, 8-10, 16, 17, 19, 20, 22 and 23, Appellant, at pages 1 and 3 of the specification to be known as AAPA, discloses a connection system for light gauge steel construction and an assembly wherein numerous self-drilling screws or other fasteners are used to provide the connection between a panel and a support structure. AAPA does not disclose applying an adhesive curable at room temperature to at least the panel or the support structure and placing them against each other.

However it is known to use an adhesive material between plates of a lap joint used in a connection with rivets or other fasteners as attested by Orowan, see column 1, lines 8-30 and figure 1. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used an adhesive material in the connection of AAPA, in light of the teachings of Orowan, in order to relieve the load on fasteners to a relatively small extent and give protection against fretting between the

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parts joined. Appellant should note that the connection of Orowan is significantly enhanced in load bearing capacity, see column 1, lines 24-29 in particular. Regarding the recitation of the adhesive being curable at room temperature, Applicant should note that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an adhesive curable at room temperature to supplement the fasteners in the connection taught by AAPA/Orowan as evidenced by Appellant's admission that such adhesives are known, see page 3, lines 8-13 of the specification, in order to realize the benefits of using such known and available adhesives. Furthermore the product-by-process limitation that the adhesive is curable at room temperature does not affect the claimed connection system and therefore does not impart patentability to the product. As outlined above the connection system in the product-by-process claim is obvious from the connection of AAPA/Orowan. Furthermore the connection system itself comprises epoxy adhesive and at least one fastener in the joint. The fact that the adhesive was cured at room temperature does not further limit the structure of the final connection system. Even though product-by-process claims are limited and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See In re Thorpe, 777 F .2d 695, 698, 227USPQ 964, 966 (Fed. Cir. 1985).

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For claims 4-7, 11-15, 18, 21 and 24, Appellant should note that it is within the general knowledge of one of ordinary skill in the art to select the appropriate adhesive for the connection and that fast setting adhesives are old and well known to those of ordinary skill in the art.

Claims 1-3, 16, 17, 19, 22 and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Appellant's Admitted Prior Art (AAPA) in view of Orowan (US Patent 3,655,424).

Appellant, at pages 1 and 3 of the specification to be known as AAPA, discloses a connection system for light gauge steel construction and an assembly wherein numerous self-drilling screws or other fasteners are used to provide the connection between a panel and a support structure. AAPA does not disclose applying an adhesive curable at room temperature to at least the panel or the support structure and placing them against each other. However it is known to use an adhesive material between plates of a lap joint used in a connection with rivets or other fasteners as attested by Orowan, see column 1, lines 8-30 and figure 1. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used an adhesive material in the connection of AAPA, in light of the teachings of Orowan, in order to relieve the load on fasteners to a relatively small extent and give protection against fretting between the parts joined. Appellant should note that the connection of Orowan is significantly enhanced in load bearing capacity, see column 1, lines 24-29 in particular. Regarding the recitation of the adhesive being curable at room temperature, Applicant should note that it would have been obvious to one of ordinary skill in the art

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at the time the invention was made to have used an adhesive curable at room temperature to supplement the fasteners in the connection taught by AAPA/Orowan as evidenced by Appellant's admission that such adhesives are known, see page 3, lines 8-13 of the specification, in order to realize the benefits of using such known and available adhesives. Furthermore the product-by-process limitation that the adhesive is curable at room temperature does not affect the claimed connection system and therefore does not impart patentability to the product. As outlined above the connection system in the product-by-process claim is obvious from the connection of AAPA/Orowan. Furthermore the connection system itself comprises epoxy adhesive and at least one fastener in the joint. The fact that the adhesive was cured at room temperature does not further limit the structure of the final connection system. Even though product-by-process claims are limited and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See In re Thorpe, 777 F.2d 695, 698, 227USPQ 964, 966 (Fed. Cir. 1985). For the recitation of "applying a bead of adhesive", owing to the commonly accepted meaning of the word "bead" to mean "a projecting band", the examiner contends that any coating of adhesive could be considered a "bead" and particularly the coating of adhesive as illustrated in figure 1 of Orowan is definitely a "bead".

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Claims 4-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA/Orowan as applied to claim 1 above, and further in view of Good et al. (US Patent 4,426,425).

AAPA/Orowan discloses a connection system as shown above except for the adhesive being a two-part epoxy system comprising a resin and a hardener mixed in equal portions by weight or volume wherein the adhesive fully cures within 72 hours. However Good et al. teaches such adhesive, see column 2, lines 26-34 and 49-53 and column 3, lines 8-20. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used a two-part epoxy adhesive system in the connection of AAPA/Orowan, in light of the teachings of Good et al., in order to achieve a superior shear and bond strength. Appellant should note that curable adhesives usually cure within 72 hours. Regarding the recitation of "a two-part epoxy system comprising a resin and hardener mixed in equal portions by weight or volume", as showed above Good et al. teaches a two-part epoxy system, see column 2, lines 49-53 and column 3, lines 8-25 where it is stated that "a useful range of hardener for the particular resin employed therein in parts by weight based on total parts by weight of resin plus hardener of 100, is indicated to be 16 to 30, or more. The most effective amount of hardener for any particular resin system, and its application, including curing considerations, are readily ascertainable by those of ordinary skill in the art." It is the examiner's position that the "16 to 30 or more" statement in Good et al. includes 50% by weight of hardener. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a two-part epoxy with an equal amount by

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weight of resin and hardener in the connection system of AAPA/Orowan/Good et al. since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Furthermore Appellant admits at page 3 of the specification that two-part epoxy adhesives mixed in equal portions by weight or volume and curable at room temperature are known.

Claims 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appellant's Admitted Prior Art (AAPA) in view of Orowan and Good et al.

With regards to claims 8-10, Appellant, at pages 1 and 3 of the specification to be known as AAPA, discloses a connection system for light gauge steel construction wherein numerous self-drilling screws or other fasteners are used to provide the connection between a panel and a support structure. AAPA does not disclose applying a bead of epoxy curable at room temperature to at least the panel or the support structure and placing them against each other. However it is known to use an adhesive material between plates of a lap joint used in connection with rivets or other fasteners as attested by Orowan, column 1, lines 8-30 and figure 1. Furthermore, Good et al. teaches using an epoxy as adhesive to adhere metal members, see column 2, lines 26-34. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have an epoxy adhesive in the connection of AAPA, in light of the teachings of Orowan and Good et al., in order to relieve the load on the fasteners to a relatively small extent and achieve a superior shear and bond strength. Appellant should note that the connection of Orowan is significantly enhanced in load bearing

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capacity, see column 1, lines 24-29 of Orowan. Regarding the recitation of the adhesive being curable at room temperature, Applicant should note that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an adhesive curable at room temperature to supplement the fasteners in the connection taught by AAPA/Orowan as evidenced by Appellant's admission that such adhesives are known, see page 3, lines 8-13 of the specification, in order to realize the benefits of using such known and available adhesives. Furthermore the product-by-process limitation that the adhesive is curable at room temperature does not affect the claimed connection system and therefore does not impart patentability to the product. As outlined above the connection system in the product-by-process claim is obvious from the connection of AAPA/Orowan. Furthermore the connection system itself comprises epoxy adhesive and at least one fastener in the joint. The fact that the adhesive was cured at room temperature does not further limit the structure of the final connection system. Even though product-by-process claims are limited and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See In re Thorpe, 777 F.2d 695, 698, 227USPQ 964, 966 (Fed. Cir. 1985). For the recitation of "applying a bead of adhesive", owing to the commonly accepted meaning of the word "bead" to mean "a projecting band", the examiner contends that any coating of

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adhesive could be considered a "bead" and particularly the coating of adhesive as illustrated in figure 1 of Orowan is definitely a "bead".

For claims 12-15, see column 2, lines 25-34 and column 3, lines 8-20 of Good et al.

Claims 18, 21 and 24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA/Orowan as applied to claims 16, 19 and 22 above, and further in view of Good et al.

AAPA/Orowan discloses a connection system and an assembly as shown above except for the adhesive being selected from the group consisting of epoxy, methacrylate and urethane or the adhesive being a two-part epoxy system. However Good et al, teaches such adhesive, see column 2, lines 25-29. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used a two-part epoxy system as the adhesive of AAPA/Orowan, in light of the teachings of Good et al., in order to achieve superior shear and bond strength.

(11) Response to Argument

In response to Appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Orowan clearly

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teaches the use of adhesive in combination with rivets, pins, bolts or similar fastening devices to join metallic parts as outlined in the above rejections. Furthermore Appellant admits in his arguments that "the Orowan'424 reference represents an approach that was originally tried by Applicant". This statement, if needs be, confirms that the Orowan reference is not only in the field of Appellant's endeavor but is reasonably pertinent to the particular problem with which Appellant was concerned. Good et al. also teaches use of epoxy adhesive in the context of joining metal members.

In response to Appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The examiner has shown that the Orowan reference teaches Appellant's invention as outlined above.

In response to Appellant's argument that there is no specific teaching of a two-part epoxy system comprising a resin and hardener mixed in equal portions by weight or volume, the examiner respectfully disagrees. As outlined above in the rejections of the claims, Good et al. teaches a two-part epoxy system, see column 2, lines 49-53 and column 3, lines 8-25 where it is stated that "a useful range of hardener for the particular resin employed therein in parts by weight based on total parts by weight of resin plus

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hardener of 100, is indicated to be 16 to 30, or more. The most effective amount of hardener for any particular resin system, and its application, including curing considerations, are readily ascertainable by those of ordinary skill in the art.” It is the examiner’s position that the “16 to 30 or more” statement in Good et al. includes 50% by weight of hardener. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a two-part epoxy with an equal amount by weight of resin and hardener in the connection system of AAPA/Orowan/Good et al. since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. furthermore Appellant admits on page 3 of the specification that two-part epoxy systems with a resin and hardener mixed in equal portions by weight or volume are known.

In response to Appellant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., “the load-bearing capacity of the adhesive is such that the panel is joined to the structure in a connection which is significantly enhanced in load-bearing capacity to a connection provided only by the at least one fastener”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore there is no structural difference between the claimed invention and the prior art of record to patentably distinguish the claimed invention from the prior art. As for the recitation of “a connection that is significantly

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enhanced in load-bearing capacity to a connection provided only by the at least one fastener", it appears that the advantage recognized by Appellant is another advantage that would flow naturally from following the suggestion of the prior art and as such cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

In response to Appellant's argument that there is no disclosure or teaching of methacrylate or urethane as recited in claim 18, the examiner would like to point out that the two-part epoxy taught by Good et al. meets the limitation of claim 18 since the claim recites that "the adhesive is selected from the group consisting of epoxy, methacrylate, and urethane". Furthermore Appellant admits at page 3 of the specification that such adhesives are known.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,



Essama Omgba: eo
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